Some notes on the genera Muellerianella and Florodelphax from Greece (Homoptera: Delphacidae) with a description of Florodelphax mourikisi n. sp. from Ikaria island

by

SAKIS DROSOPOULOS

Benaki Phytopathological Institute Kiphisia-Athens-Greece

ABSTRACT. — A species of *Muellerianella* has been found in northwest Greece which is morphologically similar to *M. extrusa* (Scott) but its food plant is not the same as that reported from central Europe. In addition *Florodelphax mourikisi* n. sp. is described from Ikaria island. The new species is externally very different from *F. leptosoma* (Flor, 1861) but male genital segment, aedeagus, parameres and anal tube of both species are similar. The new species is considered an insular species.

Notes on the genus *Muellerianella*

In western Europe this genus comprises three species: *M. fairmairei* (Perris, 1857) feeding on *Holcus lanatus* L., *M. brevipennis* (Boheman, 1847) feeding on *Deschampsia caespitosa* (L.) P.B., and *M. extrusa* (Scott, 1871) feeding on *Molinia caerulea* (L.) Moench. *M. extrusa* was considered a synonym of *M. fairmairei* until recently (Booij, 1981), but the two species can be distinguished from each other by the orientation of the right spine of the aedeagus (fig. 4).

M. fairmairei is a more southern species than the other two and has been found on *H. lanatus* in many localities in Greece. The other two delphacid species have not been found in Greece although their food plants occur in this country. Recently, however, near Ioannina, (northwest) Greece, a large number of a *Muellerianella* species was collected on *Carex divulsa* ssp. *divulsa* Stokes, while at the same locality *M. fairmairei* was present on *H. lanatus*. Several attempts to rear the specimens collected from *C. divulsa* on *H. lanatus* in the laboratory failed. Therefore, considering the known host preference specificity, the possibility existed that a new species had been found at Ioannina. Further investigations at this locality revealed that this population was relying not only on *C. divulsa* ssp. *divulsa* but also on grasses (e. g. *Setaria pumila* (Poiret) Schultes). Samples collected from this grass could not be reared in the laboratory on *H. lanatus* but they did survive for a long time on *S. pumila*.

Morphological examination of the male genital segment, parameres and aedeagus showed constant differences with *M. fairmairei*, also collected in Greece, especially in the orientation of the right spine of the aedeagus, as is shown in fig. 1-9. Further, comparison of these specimens with specimens of *M. extrusa* donated by Dr. C. J. H. Booij revealed that in all characters they are closely similar. However, there is some variation regarding the orientation of the left and central spines of the aedeagus. Morphologically, therefore, the specimens from Greece are closer to *M. extrusa*.

Above observations suggest that in Greece *M. extrusa* does not occur on *M. caerulea*, which incidentally is very rare in Greece, but on several other food plants. In contrast to this *M. fairmairei* and *M. brevipennis* are always found in association with their specific food plant. In addition to this, Morris (1974) and Booij (1981) reported that *M. extrusa* has been found on other food plants in western Europe. Therefore, *M. extrusa* could be considered as a complicated species consisting of different biotypes which are morphologically very difficult to distinguish. To what extent differentiation among these biotypes exists, should be examined biochemically.

Notes on the genus *Florodelphax*

The genus *Florodelphax* Vilbaste, 1968 is comprised of two species: *F. leptosoma* (Flor, 1861) and *F. paryphasma* (Flor, 1861) (Nast, 1972). Morphological characters of these species

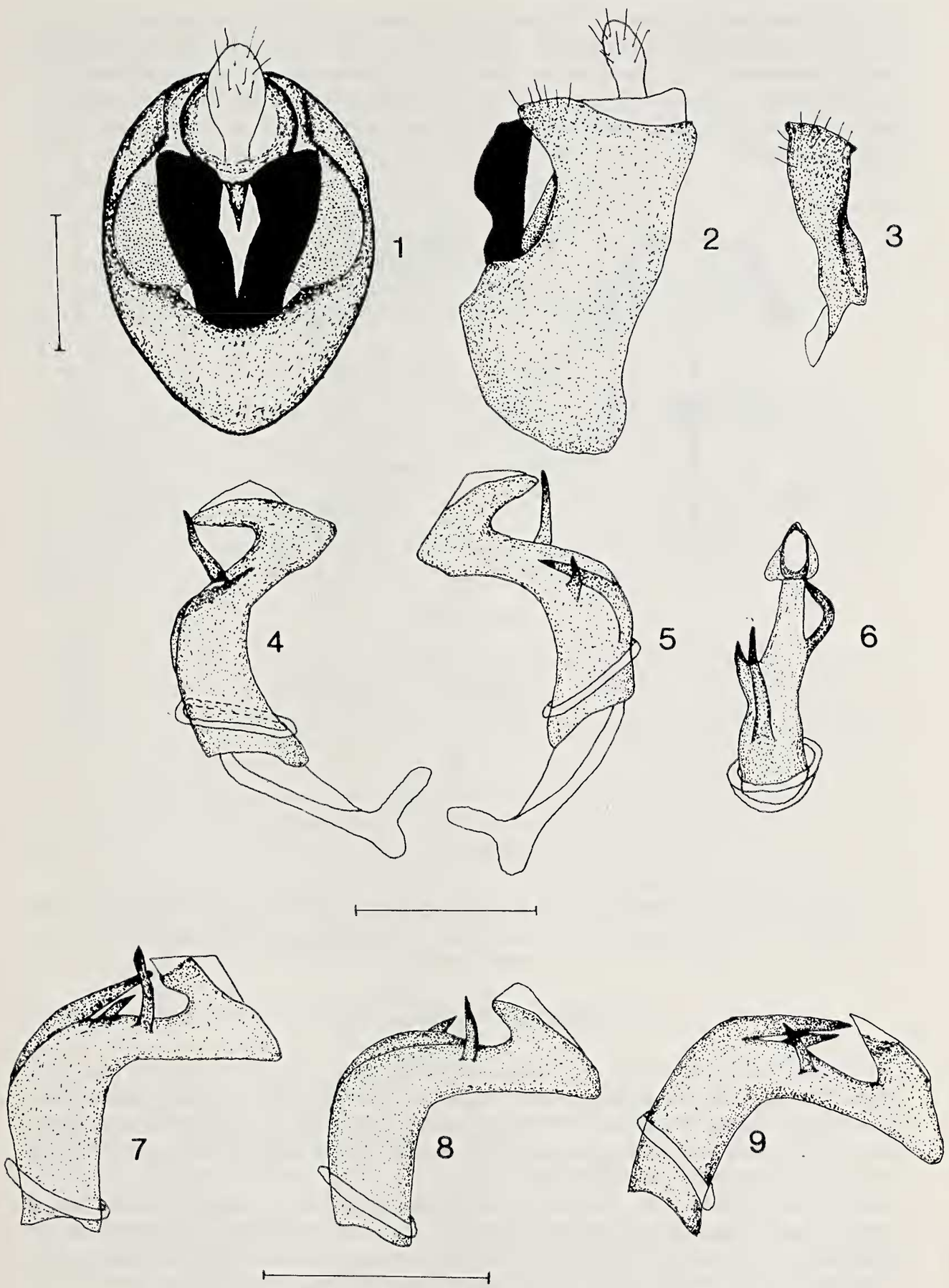

Fig. 1-6. *Muellerianella extrusa* collected on *Carex divulsa*; 1, male genital segment from behind; 2, same in side view; 3, paramere; 4, aedeagus, right side; 5, the same, left side; 6, the same, dorsal. 7, *M. extrusa* also from Greece, collected on *Setaria pumila*, aedeagus right side. 8, aedeagus right side of *M. extrusa* from Holland. 9, the same of *M. fairmairei* collected in Greece.

have been presented by Vilbaste (1971) and Ossiannilsson (1978). *F. leptosoma* has been found in Greece in swampy places of mountainous areas where *Juncus* and *Carex* spp. are in association (Drosopoulos, 1981). However, on Ikaria island close to the sea and in a habitat where *Juncus acutus* L. and *Carex* spp. were growing, an unusual delphacid very similar to *Xanthodelphax stramineus* (Stål, 1858) was collected. This delphacid appeared to be a new species, which is described below.

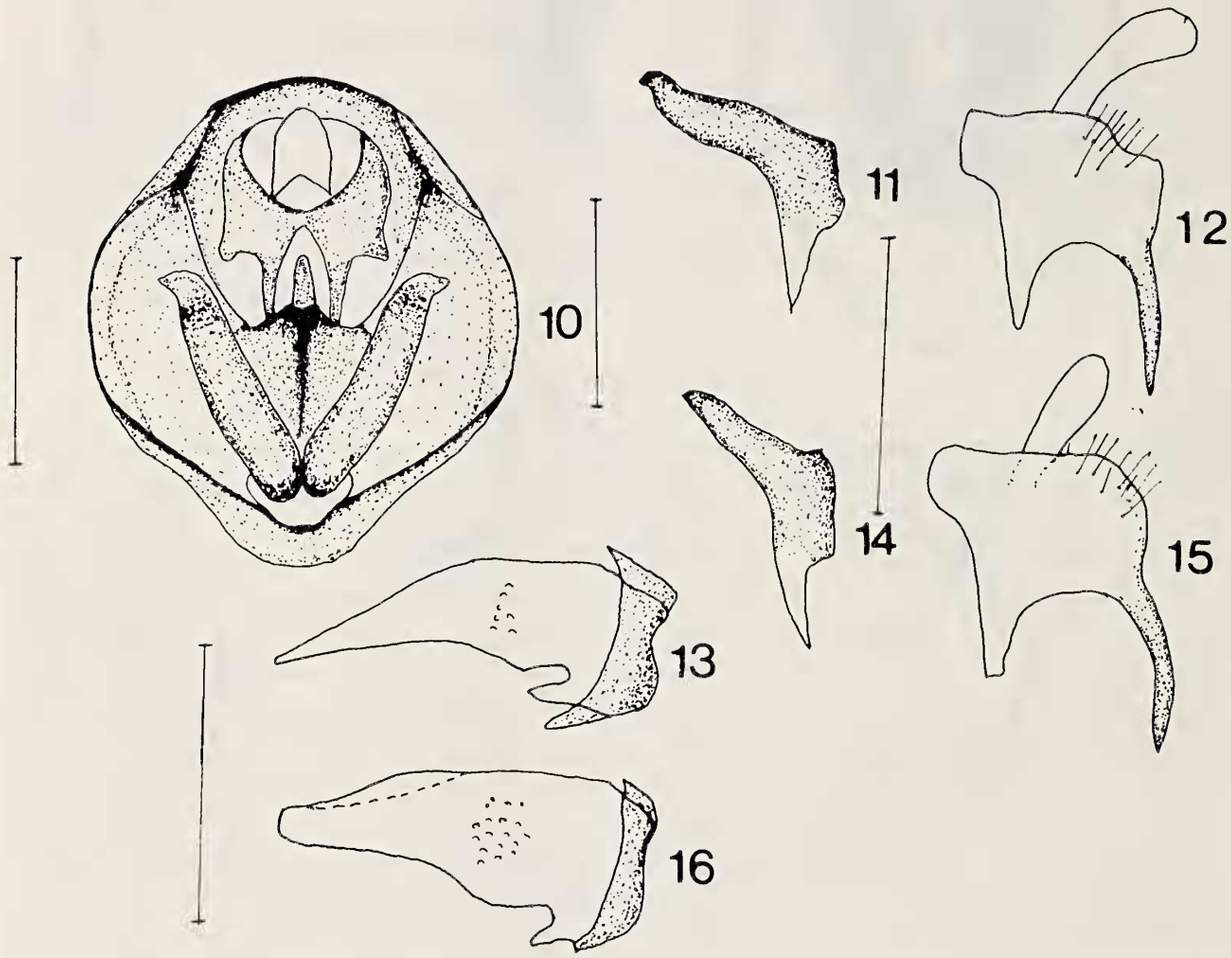

Fig. 10-16. *Florodelphax mourikisi* (10-13) and *F. leptosoma* (14-16); male genital segment from behind; 11, 14, paramere; 12, 15, anal tube; 13, 16, aedeagus. (In all figures bars represent 0.2 mm).

Florodelphax mourikisi n. sp.

F. mourikisi is closely related to *F. leptosoma* but can be distinguished from this species by the shape of the body and the color of body and wings. The body of *F. mourikisi* is thinner and slightly longer than in *F. leptosoma*. The body color of *F. leptosoma* is very dark and in brachypterous specimens the fore wing is black with a whitish stripe at the edge, while body and wing color of *F. mourikisi* are entirely yellowish.

The genital segment of *F. mourikisi* is wider, the parameres are more robust and longer (therefore they extend more out of the phragma), the anal tube is somewhat smaller and its spines are less curved as compared to *F. leptosoma*, (fig. 10-16). Finally the aedeagus of *F. mourikisi* is more slender and its front part more acute than that of *F. leptosoma*.

Measurements of brachypterous specimens. — *F. mourikisi* body length 6 ♂♂: 1.9-2.1 mm, 3 ♀♀: 2.3-2.5 mm; head width 6 ♂♂: 0.7 mm, 3 ♀♀: 0.75-0.8 mm. *F. leptosoma* (originated from Olympus Mt., loc. Stavros, 1100 m), body length 6 ♂♂: 1.9-2.0 mm, 6 ♀♀: 2.5-2.6 mm; head width 6 ♂♂: 0.7-0.9 mm, 6 ♀♀: 0.75-0.9 mm.

Holotype: ♂ brachypterous; paratypes: 5 ♂♂ brachypterous and 4 ♀♀ brachypterous. Holo-

type and paratypes collected at Gialiskari — Ikaria island, Greece, on 15.VII.1981. Leg. S. Drosopoulos, in collection S. Drosopoulos of the Benaki Phytopathological Institute.

The new species seems to be ecologically and geographically separated from its close relative *F. leptosoma*. Ecologically, it can be considered a coastal species being separated from *F. leptosoma* which is not found in such habitats in Greece. Geographically, it is an insular species probably endemic to Ikaria, because investigations in other islands close to Ikaria in similar biotopes neither *F. leptosoma* nor *F. mourikisi* was found. However, Ikaria is a unique island because many other delphacids (e.g. *Iubsoda stigmatica* (Melichar, 1897), *Kelisia melanops* Fieber, 1878, *Alatades trilineatus* Dlabola, 1957, *Ditropis pteridis* (Spinola, 1839)), which are present on Ikaria, were not found on Naxos or Paros.

The new species is named after the director of the Benaki Phytopathological Institute Dr. P. Mourikis, who has contributed greatly to the development of entomology in Greece.

ACKNOWLEDGEMENTS

I thank Drs. M. Asche (Marburg, W. Germany), J. Dlabola (Praha, Czechoslovakia) for their comments on the material of the new *Florodelphax* species, Prof. F. E. Strong (F.A.O. project, Greece) for editing the manuscript; Drs. F. M. Muller (Wageningen, The Netherlands) and M. Damanakis for identifying some of the grass species; Dr. C. J. H. Booij (Wageningen, The Netherlands) for supplying material of *M. extrusa*; Miss V. Kapothanasi for valuable assistance of mounting the material and typing the manuscript, and the authorities of the Benaki Phytopathological Institute for supporting my hemipterological studies in Greece.

LITERATURE

Booij, C. J. H., 1981. Biosystematics of the Muellerianella complex (Homoptera, Delphacidae), Taxonomy, morphology and distribution. — *Neth. J. Zool.* 31 (3): 572-595.

Drosopoulos, S., 1977. Biosystematic studies on the Muellerianella complex (Delphacidae, Homoptera — Auchenorrhyncha). — *Meded. Landbouwhogeschool Wageningen* 77: 1-133.

————, 1982. Hemipterological studies in Greece. Part II Homoptera-Auchenorrhyncha. On the family Delphacidae. — *Marburger ent. Publ.* 1 (6): 35-88.

Morris, M. G., 1974. Auchenorrhyncha (Hemiptera) of the Burren, with special reference to species associations of the grasslands. — *Proc. R. Ir. Acad.* 74 (B): 7-30.

Nast, J., 1972. *Palaeartic Auchenorrhyncha (Homoptera), an annotated checklist*: 1-550. Polish Scientific Publishers Warsaw.

Ossiannilsson, F., 1978. The Auchenorrhyncha (Homoptera) of Fennoscandia and Denmark. — *Fauna ent. Scand.* 7 (1): 1-222.

Vilbaste, J., 1971. *Die Zikaden Estlands* I. Tallinn: 1-284 (In Estonian).

LUCANUS CERVUS (LINNAEUS) IN NEDERLAND (COL.: LUCANIDAE). Enige jaren geleden werd in dit tijdschrift (1980, deel 40: 24) door ons het verzoek gedaan informatie te verstrekken over het vliegend hert. Inmiddels is over het voorkomen van *Lucanus cervus* in Nederland een rapport verschenen in de Nieuwsbrief EIS-Nederland 12 (1982): 35-43, waarin de verspreiding, biologie, kenmerken en natuurbeschermingsaspecten worden behandeld. *Lucanus* is in totaal (ca. 1830-1980) op minstens 69 plaatsen in Nederland waargenomen, op minstens 16 plaatsen nog na 1960. De waarnemingen zijn vooral geconcentreerd in de omgeving van Apeldoorn, van Nijmegen, en in Zuid-Limburg.

Overigens is zojuist over Lucanidae in het algemeen een aardig boekje verschenen in de serie „Die Neue Brehmbücherei", no. 551. Het is van B. Klausnitzer, 1982, Hirschkäfer oder Schröter (Lucanidae), 83 pp., 55 fig., 1 pl., A. Ziemsen Verlag (Wittenberg Lutherstadt), ISSN 0138-1423. Wij hebben er bij onze boekhandel *f* 13,25 voor betaald.

J. Krikken & H. C. Pijpers, Rijksmuseum van Natuurlijke Historie, Postbus 9517, 2300 RA Leiden.